

**IV. Remarks**

Applicants thank the Examiner for the Case Interview conducted via phone on June 8, 2004.

Applicants have amended claims 1, 5, 15, 16, and 20; and have cancelled claim 35. Accordingly, after entering this amendment, claims 1-7, 9-17, 19-21, and 34 are pending.

With the claims amended and the remarks provided below, Applicants respectfully request reconsideration and a withdrawal of all rejections.

***Amendments to the Drawings***

Figure 3 has been amended to replace one of the occurrences of reference numeral 56 to the reference numeral 52. Paragraph [0019] of the original Application as filed recites that the primary edge 52 is formed along the length of inner surface 32 and that the primary edge 52 forms a groove 54. Paragraph [0020] of the original Application as filed recites that the secondary edge 56 radially extends on the end face 50, and original Figure 3 in the Application as filed shows another occurrence of the reference numeral 56 properly pointing to the secondary edge 56 extending around the end face 50. Therefore, the amended reference numeral should be 52 rather than 56 and no new matter is added.

Furthermore, Figure 3 has been amended to extend the reference line of one of the occurrences of reference numeral 52 to the primary edge 52 formed along the length of inner surface 32. As discussed above, Paragraph [0019] discloses the primary edge 52 as being formed along the length of inner surface 32 and as forming a groove 54. Therefore, the amended reference line should extend to the primary edge 52 forming the groove 54 and no new matter is added.

Figure 4 has been amended to renumber line 5-5 as line 5a-5a and to include an additional cross-sectional line labeled 5b-5b. As a result, Figure 5 has been renumbered as Figure 5a.

Furthermore, Figure 5b has been added as a cross-sectional view of Figure 4 taken along line 5b-5b in order to show the angle 51 of the secondary edge 56 that is defined by the inner surface 32 and the end face 50 of the pinion 12. Figures 3-5, 7, and 8 collectively show that the inner surface 32

**Amendments to the Specification**

Paragraph [0009a] has been added to provide a brief description of Figure 5b. Similarly, Paragraph [0009] has been amended to refer to renumbered Figure 5a.

Paragraph [0013] has been amended to further clarify the description of secondary edge by reciting that the inner surface and an end face of the pinion define a secondary cleaning edge. Figures 3, 4, and 7 and Paragraph [0020] of the original Application as filed disclose the secondary edge 56, 256 as being defined by the inner surface 32, 232 and the end face 50 of the pinion 12, 212. Therefore, no new matter is being added.

Paragraph [0019] has been amended to further clarify the description of angle formed by the inner surface and the end face by reciting that the inner surface 32 and the end face 50 cooperate to define an edge having an angle 51 that is preferably less than or equal to 90 degrees. Paragraph [0013] now also recites that the angle 51 is preferably equal to 90 degrees. Figures 3-5, 7, and 8 disclose that the angle formed by the inner surface 32 and the end face 50 is generally 90 degrees, and therefore no new matter is being added.

Paragraph [0020] has been amended to consistently refer to Figures 5a and 5b, and to consistently refer to the secondary edges 56 as extending *circumferentially* along the end face 50. (Emphasis added). Figures 3, 4, and 7 disclose the secondary edges 56 extending circumferentially along the end face 50, and therefore no new matter is being added.

**Claim Objections**

Responsive to the claim objection, claim 15 has been amended to delete the word "so" in accordance with the Examiner's instructions in the Office Action.

**Claim Rejections – 37 U.S.C. § 102(b)**

Responsive to the rejections of claim 1-7, 9-17, 19-21, and 34 under 35 U.S.C. § 102(b), *Johnston* fails to teach each and every element of a device as claimed in the present application.

Claim 1 has been amended to recite that the inner surface is *terminating at* an end face of the pinion. (Emphasis added). Claim 1 has furthermore been amended to recite that *the inner surface and the end face are perpendicular with each other*

and that they *define a secondary edge*. (Emphasis added). Figures 4, 5, 7, and 8 in the original application as filed disclose that the inner surface 32 terminates at the end face 50. Furthermore, Figures 4, 5, 7, and 8 in the original application as filed disclose that the end face 50 and the inner surface 32 are substantially perpendicular with each other and that they define a secondary edge 56. Therefore, no new matter is being added.

A claim is anticipated only if each and every element as set forth in the claim is found, either explicitly or inherently described, in a single prior art reference. *Johnston* does not disclose an inner surface extending to a perpendicular end face in order to form a secondary edge. The inner surface 24 in *Johnston* does not extend to the end face (the face perpendicular to the inner surface 24 and located near the arrow of element 18 in Figure 2 of *Johnston*). Furthermore, the inner surface 24 in *Johnston* does not form a secondary edge with the end face. Rather, the inner surface 24 and the end face in *Johnston* are separated by a chamfered portion 22 such that the inner surface 24 does not extend to the end face and the respective components do not form a secondary edge. (*Johnston*, col. 2, lines 15-16, Figure 2). Furthermore, the chamfered portion 22 and the inner surface are not perpendicular with each other. Therefore, the chambered portion 22 cannot be considered to be part of the end face. Accordingly, claim 1 is not anticipated by *Johnston*.

Claims 2-7 and 9-14 depend on amended claim 1. Thus, claims 1-7 and 9-14 are allowable for the reasons provided above.

Claim 15 has likewise been amended to recite that the inner surface is *terminating at an end face of the pinion; that the inner surface and the end face are perpendicular with each other*, and that they *define a secondary edge*. (Emphasis added). The inner surface 24 in *Johnston* does not extend to the end face (the face perpendicular to the inner surface 24 and located near the arrow of element 18 in Figure 2 of *Johnston*). Furthermore, the inner surface 24 in *Johnston* does not form a secondary edge with the end face. Rather, the inner surface 24 and the end face in *Johnston* are separated by a chamfered portion 22 such that the inner surface 24 does not extend to the end face and the respective components do not form a secondary edge. (*Johnston*, col. 2, lines 15-16, Figure 2). Furthermore, the chamfered portion 22 and the inner surface are not perpendicular with each other.

Therefore, the chambered portion 22 cannot be considered to be part of the end face. Accordingly, claim 15 is not anticipated by *Johnston*.

Claims 16, 17, 19-21, and 34 depend on amended claim 15. Thus, claims 15-17, 19-21, and 34 are allowable for the reasons provided above.

With respect to claim 35, claim 35 has been cancelled, and thus no further discussion of this claim is necessary.

### **Conclusion**

Thus, Claims 1-7, 9-17, 19-21, and 34 should be allowed and such action is earnestly solicited.

Respectfully submitted,

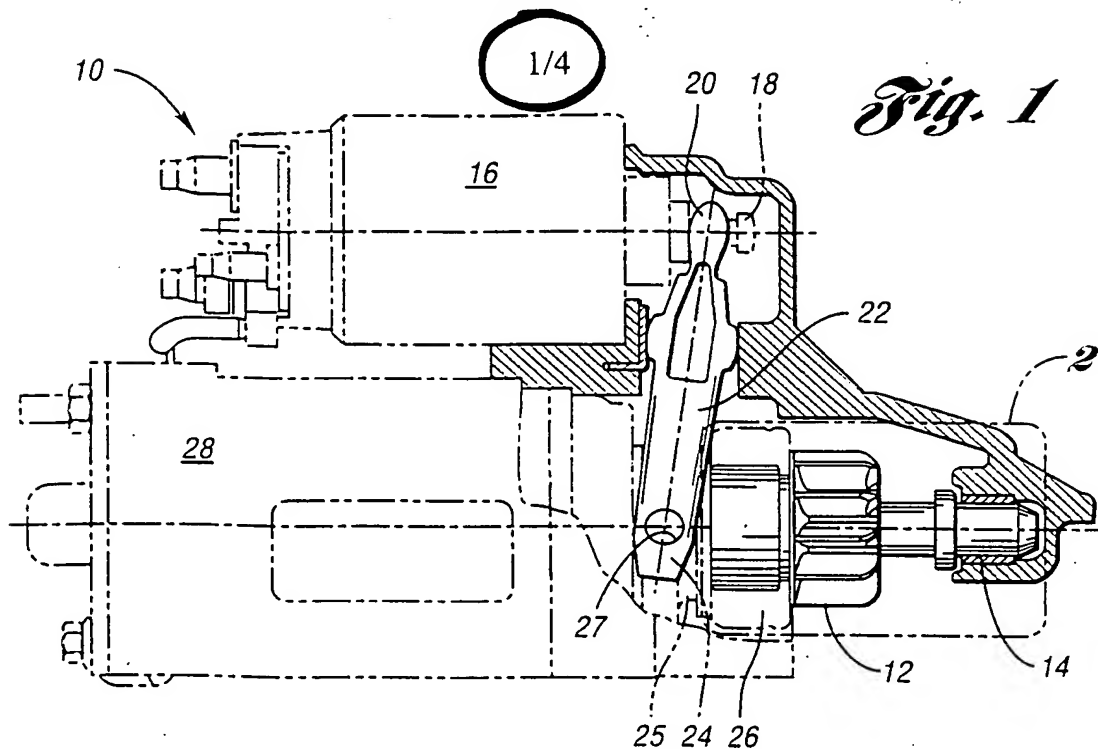
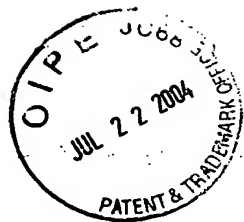
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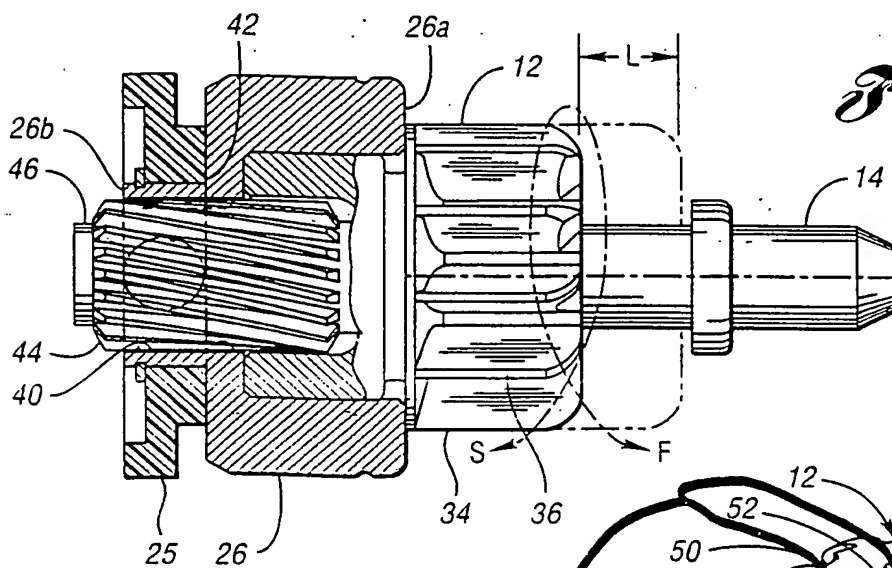
  
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### **Attachments:**

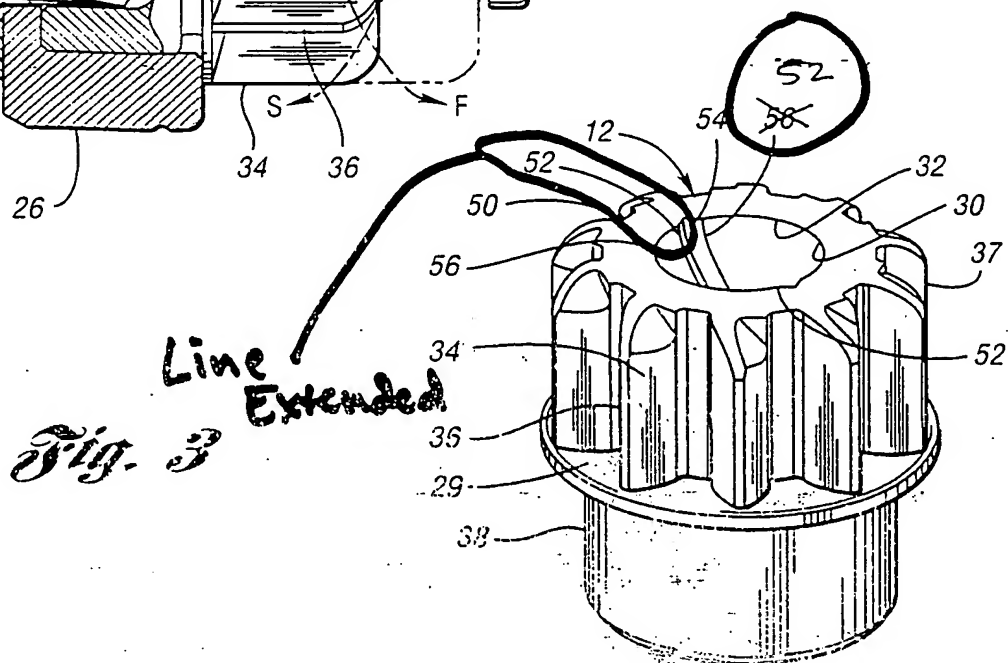
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Annotated marked-up copy of Sheet 2;  
Annotated marked-up copy of the sheet previously labeled as Sheet 3;  
Replacement Sheet 1;  
Replacement Sheet 2;  
Replacement Sheet 3; and  
Replacement Sheet 4.



*Fig. 1*



*Fig. 2*



*Fig. 3*



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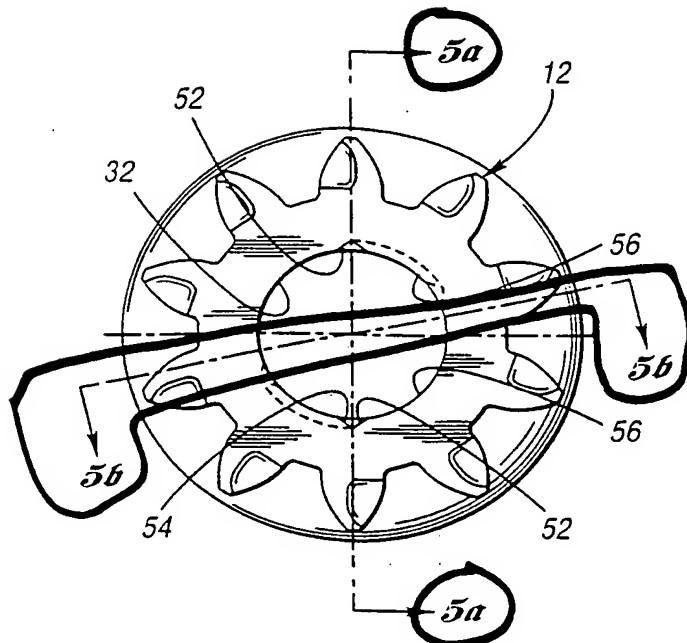


Fig. 4

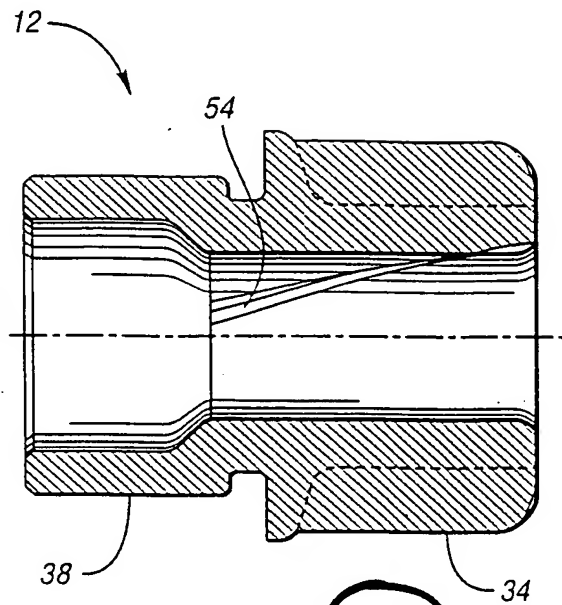


Fig. 5a

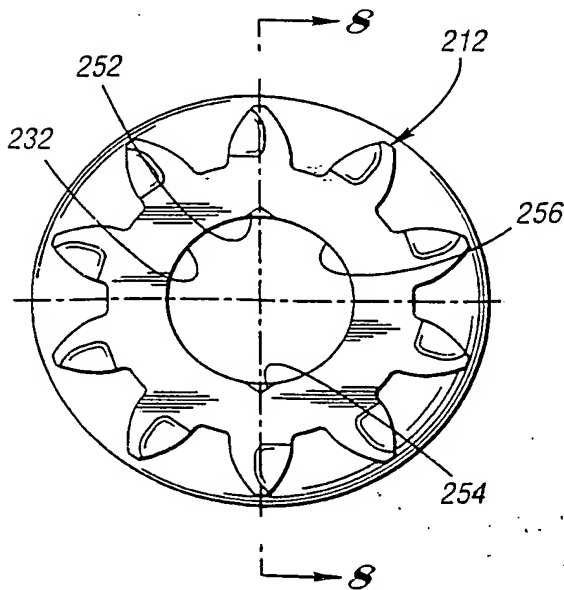


Fig. 7

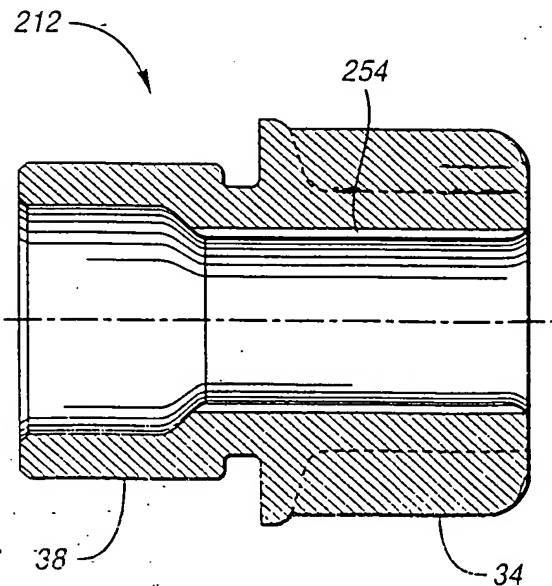
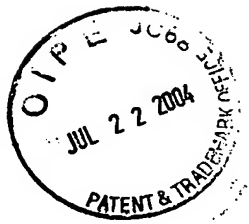


Fig. 8



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